

## Claims

What is claimed is:

- [c1] A method of translating data, comprising:
  - obtaining a value of an implementation data structure from an instrumented program;
  - accessing a translator associated with the instrumented program, wherein the translator comprises a plurality of transformations; and
  - translating the value of the implementation data structure using the translator to obtain translated data, wherein the translating comprises applying the plurality of transformations to convert a representation of the implementation data structure into an interface data structure.
- [c2] The method of claim 1, further comprising:
  - executing a tracing program to enable a probe in the instrumented program;
  - triggering the probe in the instrumented program; and
  - transferring translated data from the translator to an execution framework, wherein the execution framework comprises a tracing framework.
- [c3] The method of claim 1, further comprising:
  - executing a debugging program in the instrumented program in response to an instrumentation request; and
  - transferring translated data to an execution framework in response to the instrumentation request, wherein the execution framework comprises a debugger.
- [c4] The method of claim 1, wherein the translator is defined using a high-level programming language.

- [c5] The method of claim 1, wherein the translator is updated independently of the execution framework.
- [c6] The method of claim 1, further comprising:  
delivering the translator using an encoded delivery.
- [c7] The method of claim 1, further comprising:  
delivering the translator using a compiled delivery.
- [c8] The method of claim 1, further comprising:  
selecting the translator using an instrumentation request.
- [c9] The method of claim 1, further comprising:  
selecting the translator using knowledge of a function argument type of the instrumented program.
- [c10] A system for translating data, comprising:
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an instrumented program comprising at least one implementation data structure;
  - a translator comprising a plurality of transformations;
  - a compiler arranged to accept the translator and transform a value of the at least one implementation data structure into translated data; and
  - an execution framework configured to receive the translated data.
- [c11] The system of claim 10, wherein an instrumentation request explicitly translates the value of the at least one implementation data structure into the translated data.
- [c12] The system of claim 10, wherein a function call implicitly triggers the translating the value of the at least one implementation data structure into the translated data.
- [c13] The system of claim 10, wherein the translator is defined using a high-level programming language.

- [c14] The system of claim 10, wherein the translator is updated independently of the execution framework.
- [c15] The system of claim 10, wherein the translator is delivered using at least one selected from the group consisting of encoded delivery and compiled delivery.
- [c16] The system of claim 10, wherein the execution framework comprises at least one selected from the group consisting of a tracing framework and a debugger.
- [c17] A computer system for translating data, comprising:
  - a processor;
  - a memory;
  - a storage device; andsoftware instructions stored in the memory for enabling the computer system to:
  - obtain a value of an implementation data structure from an instrumented program;
  - access a translator associated with the instrumented program, wherein the translator comprises a plurality of transformations; and
  - translate the value of the implementation data structure using the translator to obtain translated data, wherein the translating comprises applying the plurality of transformations to convert a representation of the implementation data structure into an interface data structure.
- [c18] The computer system of claim 17, wherein the translator is defined using a high-level programming language.
- [c19] The computer system of claim 17, wherein the translator is updated independently of the execution framework.
- [c20] The computer system of claim 17, further comprising software instructions to deliver the translator using an encoded delivery.

- [c21] The computer system of claim 17, further comprising software instructions to deliver the translator using a compiled delivery.
- [c22] The computer system of claim 17, further comprising software instructions to select the translator using the instrumentation request.
- [c23] The computer system of claim 17, further comprising software instructions to select the translator using knowledge of a function argument type of the instrumented program.